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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,306	09/11/2003	Nancy Desgardin	117136	3581
25944	7590	10/20/2006	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			GELLNER, JEFFREY L	
		ART UNIT	PAPER NUMBER	
			3643	

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/659,306	DESGARDIN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jeffrey L. Gellner	3643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### **Status**

1) Responsive to communication(s) filed on 01 August 2006.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### **Disposition of Claims**

4) Claim(s) 13-30 is/are pending in the application.  
 4a) Of the above claim(s) 14 and 23 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 13, 15-22, 24-30 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### **Application Papers**

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### **Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### **Attachment(s)**

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

In their response of 18 January 2006, Applicants' elected sodium as the metal in the borohydride. Claims 14 and 23 are withdrawn because it is drawn to a non-elected species - magnesium borohydride.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13, 15, 16, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Ward (US 4,032,259).

As to claim 13, 15, 16, 18, Ward discloses a solid composition that is capable of being a pyrotechnic hydrogen generator that will decompose to hydrogen comprising an alkali metal borohydride, sodium borohydride (col. 2 lines 46-56) and strontium nitrate (col. 2 lines 58-62), devoid of organic matter (by the reference's silence), where the composition is 90% sodium borohydride and strontium nitrate (from col. 3 lines 26-44). Examiner considers the preamble of claim 13 which is a "pyrotechnic hydrogen generator for proton exchange membrane fuel cell" is given little or no patentable weight because the body of claim is a complete invention as claimed (see MPEP 2111.02).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17, 19, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward (US 4,032,259).

As to claim 17, 19, the limitations of claim 13 are disclosed as described above. Not disclosed is the composition's ratio being between 1:1 and 10:1 of alkali borohydride to strontium nitrate. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the generator of Ward by making the generator with a ratio of 1 and 10 for alkali borohydride to strontium nitrate depending upon use of the generator.

As to claims 20 and 21, the limitations of claim 13 are disclosed as described above. Not disclosed is the generator being compact, a grain. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the generator of Ward by making it into a compact grain depending upon use of the generator.

Claims 22 and 24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward (US 4,032,259) in view Wagaman (US 6,165,295).

As to claims 22, 24, 25, and 27, Ward discloses the generator of claim 13. Not disclosed is the using the generator composition in a hydrogen generator to supply hydrogen to a proton

membrane fuel cell which would necessitate a anode operable connected to the generator.

Wagaman, however, discloses that a rocket propellant can be used in a fuel cell (col. 3 lines 44-48) which would necessitate a anode operably connected to the generator. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the composition of Ward by using in a fuel cell to generate hydrogen as disclosed by Wagaman depending of application of the fuel and to use as fuel cell with a proton exchange membrane fuel cell as a well known, readily available fuel cell.

As to claim 26 and 28, the limitations of claim 22 are disclosed as described above. Not disclosed is the generator's ratio being between 1:1 and 10:1 of alkali borohydride to strontium nitrate. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the generator of Ward as modified by Wagaman by making the composition with a ratio of 1 and 10 for alkali borohydride to strontium nitrate depending upon use of the generator.

As to claims 29 and 30, the limitations of claim 22 are disclosed as described above. Not disclosed is the generator being compact, a grain. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the generator of Ward as modified by Wagaman by making it into a compact grain depending upon use of the generator.

#### *Response to Arguments*

Applicant's arguments filed 1 August 2006 have been fully considered but they are not persuasive. Applicants' arguments are; (1) neither Ward nor Wagaman disclose a pyrotechnic hydrogen generator for a proton exchange membrane fuel cell (Remarks top of page 6); (2)

Ward does not teach or suggest that his composition is a rocket propellant (Remarks bottom of page 6 to top of page 7); (3) Wagaman does not disclose that a rocket propellant can be used in a fuel cell because Wagaman's composition must be mixed with a fuel to produce a rocket propellant (Remarks page 7, bottom of page); and, (4) no motivation to combine Ward and Wagaman (Remarks at page 8).

As to argument (1), Ward discloses that with his composition "hydrogen is released during the combustion" at col. 2 lines 56. Therefore, Ward discloses a pyrotechnic hydrogen generator. The language of "for a proton exchange membrane fuel cell" is considered to be functional language, sometimes called "intended use" language, and the composition of Ward is capable of serving this function.

As to argument (2), Ward discloses that the composition is suitable as a "pyrotechnic fuel for use in rocket motor ignitions" at col. 2 lines 25-28, and as an "improved fuel for use in solid fuel ramjet" at col. 2, lines 34-37. These two passages together disclose that the composition is capable of being used as a rocket fuel.

As to argument (3), Wagaman states in one sentence that his composition may be used for "rocket propellants" and "torpedo propellants" at col. 3 lines 44-47. Examiner agrees that Wagaman further goes on to state that a fuel is added for these uses. However, the next sentence is where Wagaman discloses applications of the composition for "oxygen generator and in fuel cells" (col. 3 lines 47-48). At col. 9, lines 53-67, Wagaman discloses the use of his composition for oxygen generation. No fuel or additive is disclosed for this application. Since the use of the composition in fuel cells is in the same sentence with oxygen generation and oxygen generation

does not use a fuel it logically follows that use in a fuel cell does not require a fuel. Hence, the composition itself is used in fuel cells.

As to argument (4), Examiner considers there to be motivation to combine the two references because both deal with compositions with multiple, similar uses among them gas generation.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey L. Gellner whose telephone number is 571.272.6887. The examiner can normally be reached on Monday-Friday, 8:30-4:00, alternate.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Poon can be reached on 571.272.6891. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jeffrey L. Gellner  
Primary Examiner  
Art Unit 3643